

Claims

What is claimed is:

1. A directional microphone system, comprising:

a first microphone means for receiving an acoustic energy composed of sound from a desired source and sound from undesired background noise, and for converting the acoustic energy into a first signal;

a second microphone means for receiving the acoustic energy and for converting the acoustic energy into a second signal;

means for combining the first signal and the second signal into a combined signal, the combining means operably connected to the first microphone means and the second microphone means; and

a cross-over means for producing a monaural signal representing substantially the sound from the desired source, the cross-over means comprising a first filter means for filtering one of the first or second signals and producing a first filter output, a second filter means for filtering the combined signal and producing a second filter output, and a unifying means for combining the first filter output and the second filter output to produce the monaural signal, the cross-over means operably connected to the combining means.

2. The directional microphone system of claim 1, wherein the first and second microphone means each comprise an omnidirectional microphone element.

3. The directional microphone system of claim 1, wherein at least one of the first and second microphone means comprises a plurality of omnidirectional microphone elements.

4. The directional microphone system of claim 1, wherein the first and second microphone means each comprise a first-order gradient microphone element.

5. The directional microphone system of claim 1, wherein at least one of the first and second microphone means comprises a plurality of first-order gradient microphone elements.

6. The directional microphone system of claim 1, wherein the combining means comprises a means for subtracting the second signal from the first signal.

7. The directional microphone system of claim 1, wherein the first filter means comprises a high band equalization and filtering delay and a low band equalization and filtering delay.

8. The directional microphone system of claim 1, wherein the second filter means comprises a mid band equalization and filtering delay.

9. The directional microphone system of claim 1, wherein the first filter means comprises a high-pass filter.

5 10. The directional microphone system of claim 1, wherein the second filter means comprises a low-pass filter.

11. The directional microphone system of claim 1, wherein at least one of the first and second filter means comprises a plurality of filters.

10 12. A directional microphone system for use with a computer, the computer comprising a processor and first and second stereo inputs each operably connected to the processor, the directional microphone system comprising:

15 a first microphone means for receiving an acoustic energy composed of sound from a desired source and sound from undesired background noise, and for converting the acoustic energy into a first signal, the first signal operably connected to the first stereo input of the computer;

a second microphone means for receiving the acoustic energy and for converting the acoustic energy into a second signal, the second signal operably connected to the second stereo input of the computer;

20 means for combining the first signal and the second signal into a combined signal, the combining means controlled by the processor of the computer, the combining means operably connected to the first microphone means and the second microphone means; and

25 a cross-over means for producing a monaural signal representing substantially the sound from the desired source, the cross-over means controlled by the processor of the computer and comprising a first filter means for filtering one of the first or second signals and producing a first filter output, a second filter means for filtering the combined signal and producing a second filter output, and a unifying means for combining the first filter output and the second filter output to produce the monaural signal, the cross-over means operably connected to the combining means.

13. The directional microphone system of claim 12, wherein the first and second microphone means each comprise an omnidirectional microphone element.

14. The directional microphone system of claim 12, wherein at least one of the first and second microphone means comprises a plurality of omnidirectional microphone elements.

15. The directional microphone system of claim 12, wherein the first and second microphone means each comprise a first-order gradient microphone element.

5 16. The directional microphone system of claim 12, wherein at least one of the first and second microphone means comprises a plurality of first-order gradient microphone elements.

17. The directional microphone system of claim 12, wherein the combining means comprises a means for subtracting the second signal from the first signal.

10 18. The directional microphone system of claim 12, wherein the first filter means comprises a high band equalization and filtering delay and a low band equalization and filtering delay.

19. The directional microphone system of claim 12, wherein the second filter means comprises a mid band equalization and filtering delay.

15 20. The directional microphone system of claim 12, wherein the first filter means comprises a high-pass filter.

21. The directional microphone system of claim 12, wherein the second filter means comprises a low-pass filter.

20 22. The directional microphone system of claim 12, wherein at least one of the first and second filter means comprises a plurality of filters.